SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION Co., Ltd.

Declaration of Conformity

Certificate No.:CTE13030068 **R/C:** 78950

Issued Date: Mar 28, 2013

In accordance with the following Applicable Directives:

2004/108/EC

Electromagnetic Compatibility

The device, as described herewith, was tested pursuant to applicable test procedure and complies with the requirements of:

EN 55024: 2010
EN 55022: 2010+AC: 2011
EN 61000-3-2: 2006+A1: 2009+A2: 2009
EN 61000-3-3: 2008

The test results are traceable to the international or national standards.

Applicant: **PROMETHEAN LIMITED**

PROMETHEAN HOUSE, LOWER PHILIPS RD, BLACKBURN, LANCASHIRE, BB15TH UNITED KINGDOM

Manufacturer: **PROMETHEAN LIMITED**

PROMETHEAN HOUSE, LOWER PHILIPS RD, BLACKBURN, LANCASHIRE, BB15TH UNITED KINGDOM

EUT Name: **ActivBoard Touch**

Model number: **PRM-AB688-01**

Listed Model(s): **PRM-AB678-01**

Laboratory: **Shenzhen Huatongwei International Inspection Co., Ltd.**
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Tel: 86-755-26748078 Fax: 86-755-26748089
Http: //www.szhtw.com.cn E-mail: cs@szhtw.com.cn

CE

Note:

The certification is only valid for the equipment and configuration described ,in conjunction with the test data detailed above.
The CE mark as shown beside can be used, under the responsibility of the manufacturer, after completion of an EC Directive of Conformity and compliance with all relevant EC Directive.

For and on behalf of
Shenzhen Huatongwei International Inspection Co.,Ltd.

Authorized by:

CIC

Shenzhen Huatongwei International Inspection Co., Ltd.
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone:86-755-26748019 Fax:86-755-26748089 http://www.szhtw.com.cn

TEST REPORT

EN 55022
Information technology equipment –
Radio disturbance characteristics – Limits and methods of measurement
EN 55024
Information technology equipment –
Immunity characteristics – Limits and methods of measurement

Report Reference No..... :	**TRE13030068 R/C: 78950**
Compiled by (position+printed name+signature).. :	File administrators Chang Xu
Supervised by (position+printed name+signature).. :	Technique principal Sam Wang
Approved by (position+printed name+signature).. :	Manager Tony Jiang
Date of issue..... :	Mar 28,2013
Testing Laboratory Name..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address..... :	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Testing location/ procedure..... :	Full application of Harmonised standards ☒ Partial application of Harmonised standards ☐ Other standard testing methods ☐
Applicant's name..... :	**PROMETHEAN LIMITED**
Address..... :	PROMETHEAN HOUSE, LOWER PHILIPS RD, BLACKBURN,LANCASHIRE BB1 5TH UNITED KINGDOM
Test specification:	
Standard..... :	**EN 55022:2010+AC:2011 EN 55024: 2010** **EN 61000-3-2: 2006+A1: 2009+A2: 2009** **EN 61000-3-3: 2008**
Test Report Form No..... :	HTWEMCCE_1A
TRF Originator..... :	Shenzhen Huatongwei International Inspection Co., Ltd.
Master TRF..... :	Dated 2006-06

Test item description..... :	ActivBoard Touch
Manufacturer..... :	PROMETHEAN LIMITED
Model/Type reference..... :	PRM-AB688-01
Listed Model…. ..... :	PRM-AB678-01
Ratings..... :	DC 5V 0.35A 1.75W
Result..... :	**Positive**

EMC -- T E S T R E P O R T

Test Report No. : **TRE13030068**	Mar 28,2013 Date of issue

Equipment under Test	:	ActivBoard Touch
Type / Model	:	PRM-AB688-01
Listed Model	:	PRM-AB678-01
Applicant	:	PROMETHEAN LIMITED
Address	:	PROMETHEAN HOUSE, LOWER PHILIPS RD, BLACKBURN,LANCASHIRE BB1 5TH UNITED KINGDOM
Manufacturer	:	PROMETHEAN LIMITED
Address	:	PROMETHEAN HOUSE, LOWER PHILIPS RD, BLACKBURN,LANCASHIRE BB1 5TH UNITED KINGDOM

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

EN 55022: 2010+AC:2011Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN 55024: 2010 Information technology equipment – Immunity characteristics – Limits and methods of measurement.
EN 61000-3-2: 2006+A1: 2009+A2: 2009 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)
EN 61000-3-3: 2008 Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample : Mar 18,2013

Testing commenced on : Mar 18,2013

Testing concluded on : Mar 26,2012

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : o 230V / 50 Hz o 120V / 60Hz
o 12 V DC o 24 V DC
■ Other (specified in blank below)

5V DC

2.3. Short description of the Equipment under Test (EUT)

The EUT is a ActivBoard Touch. PRM-AB688-01 and PRM-AB678-01 circuit is the same, only the size is different, PRM-AB688-01 is 88 inches, PRM-AB678-01 is 78 inches. All tests were conducted on Model PRM-AB688-01, Radiated Emission and Electrostatic discharge tests were conducted on Model PRM-AB678-01.

Serial number: Prototype

2.4. EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test program (customer specific)

Emissions tests……..: According to EN 55022, searching for the highest disturbance.
Immunity tests ……..:According to EN 55024, searching for the highest susceptivity.
Harmonic current…….. : Not performed according to EN 61000-3-2.
Voltage fluctuation……. : Not performed according to EN 61000-3-3.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

o - supplied by the manufacturer

■ - supplied by the lab

o USB Cable	Length (m) :	5.0m
	Shield :	shielded
	Detachable :	Undetachable
o COMPUTER	Manufacturer :	acer
	Model No. :	ZK3

2.6. Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test relative to a performance criteria defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product. Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

— essential operational modes and states;
— tests of all peripheral access(hard disks, floppy disks, printers, keyboard, mouse, etc.);
— quality of software execution
— quality of data display and transmission
— quality of speech transmission

Definition related to the performance level:

■ based on the used product standard
o based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

The apparatus shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion B:

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd.
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar. 01, 2012. Valid time is until Feb. 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sep. 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jul. 01, 2009, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the authorization is valid through Jul. 07, 2013.

VCCI

The 3m Semi-anechoic chamber (12.2m × 7.95m × 6.7m) and Shielded Room (8m × 4m × 3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2010. Valid time is until May 06, 2013.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2013.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Test Description

Emission Measurement		
Radiated Emission	EN 55022: 2010+AC: 2011	PASS
Conducted Disturbance	EN 55022: 2010+AC: 2011	PASS
Harmonic Current	EN 61000-3-2: 2006+A1: 2009+A2: 2009	N/A
Voltage Fluctuation and Flicker	EN 61000-3-3: 2008	N/A
Immunity Measurement		
Electrostatic Discharge	EN 55024: 2010 EN 61000-4-2: 2009	PASS
RF Field Strength Susceptibility	EN 55024: 2010 EN 61000-4-3: 2006+A1: 2008+A2: 2010	PASS
Electrical Fast Transient/Burst Test	EN 55024: 2010 EN 61000-4-4: 2004+A1: 2010	PASS
Surge Test	EN 55024: 2010 EN 61000-4-5: 2006	N/A
Conducted Susceptibility Test	EN 55024: 2010 EN 61000-4-6: 2009	PASS
Power Frequency Magnetic Field Susceptibility Test	EN 55024: 2010 EN 61000-4-8: 2010	N/A
Voltage Dips and Interruptions Test	EN 55024: 2010 EN 61000-4-11: 2004	N/A

Remark: The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality

system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.65dB	(1)
Conducted Disturbance	0.15~30MHz	3.42dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2012/06
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2012/10
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2012/10
4	TURNTABLE	ETS	2088	2149	2012/10
5	ANTENNA MAST	ETS	2075	2346	2012/10
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2012/10

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100106	2012/10
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2012/10
3	Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	100044	2012/10
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2012/10

Electrostatic Discharge					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	EM TEST	ESD30C	10511100210	2012/10

Electrical Fast Transient/Burst					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA COMPACT SIMULATOR	EM TEST	UCS500M6	0500-19	2012/10
2	Coupling Clamp	EM TEST	HFK	1501-14	2012/10

Conducted Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	IFR	2023A	202304/060	2012/10
2	AMPLIFIER	AR	75A250	302205	2012/10
3	DUAL DIRECTIONAL COUPLER	AR	DC2600	302389	2012/10
4	6DB ATTENUATOR	EMTEST	ATT6/75	0010230A	2012/10
5	CDN	EMTEST	CDN M3	0802-03	2012/10
6	EM CLAMP	LÜTHI	EM101	335625	2012/10

RF Field Strength Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	IFR	2032	203002/100	2012/10
2	AMPLIFIER	AR	150W1000	301584	2012/10
3	DUAL DIRECTIONAL COUPLER	AR	DC6080	301508	2012/10
4	POWER HEAD	AR	PH2000	301193	2012/10
5	POWER METER	AR	PM2002	302799	2012/10
6	TRANSMITTING AERIAL	AR	AT1080	28570	2012/10

4. TEST CONDITIONS AND RESULTS

4.1. Radiated Emission

For test instruments and accessories used see section 3.6.

4.1.1. Description of the test location

Test location: Shielded room No. 4

4.1.2. Limits of disturbance (Class B)

Frequency (MHz)	Distance (Meters)	Quasi-peak limits dB(μV/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.3. Description of the test set-up

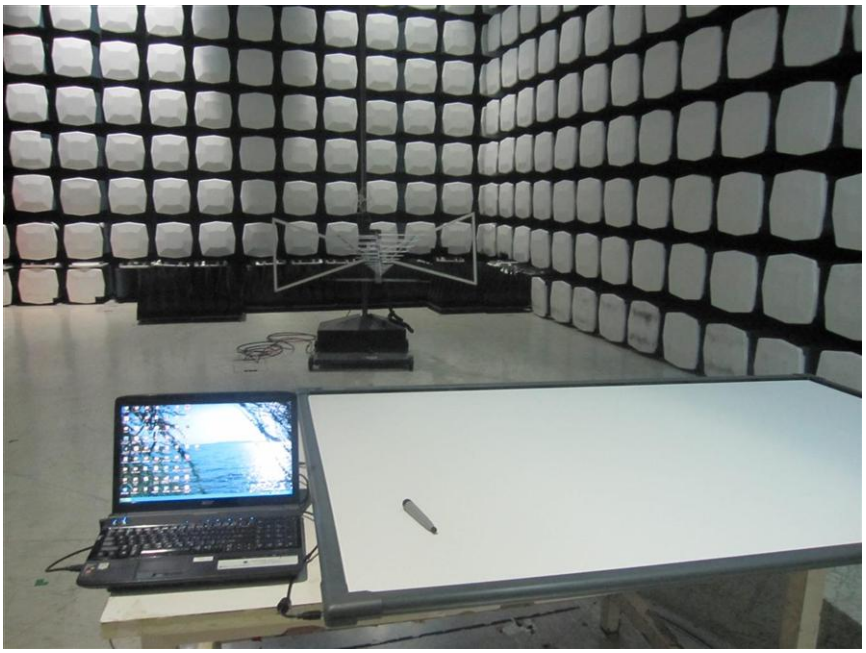
4.1.3.1. Operating Condition

The EUT is turned on during the test, and the results of the maximum emanation are recorded.

4.1.3.2. Test Configuration and Procedure

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna, and the antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

4.1.3.3. Photos of the test set-up



4.1.4. Test result

The requirements are **Fulfilled**

Band Width: 120kHz

Frequency Range: 30MHz to 1000MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).

Margin=limit-level

Level=read values+transducer

Transducer=antenna factor+pre-amplifier factor+cable loss

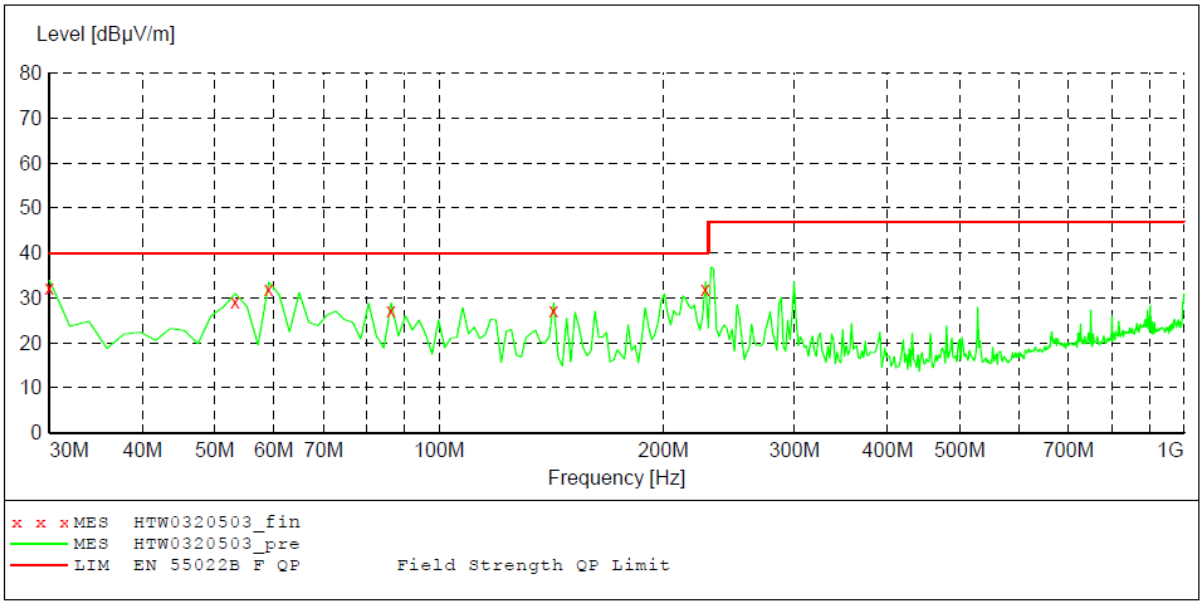
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST EN 55022 CLASS B

EUT: ActivBoard Touch M/N:PRM-AB678-01
Manufacturer: PROMETHEAN LIMITED
Operating Condition: ON
Test Site: 3M CHAMBER
Operator: Chang Xu
Test Specification: DC 5V
Comment:
Start of Test: 3/21/2013 / 7:35:49AM

SCAN TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562



MEASUREMENT RESULT: "HTW0320503_fin"

3/21/2013 8:08AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	31.90	-7.8	40.0	8.1	QP	300.0	241.00	HORIZONTAL
53.280000	28.90	-20.2	40.0	44.1	QP	300.0	187.00	HORIZONTAL
59.100000	31.50	-22.0	40.0	8.5	QP	300.0	253.00	HORIZONTAL
86.260000	26.90	-17.7	40.0	13.1	QP	300.0	267.00	HORIZONTAL
142.520000	26.90	-18.9	40.0	13.1	QP	300.0	23.00	HORIZONTAL
227.880000	31.70	-16.8	40.0	8.3	QP	100.0	121.00	HORIZONTAL

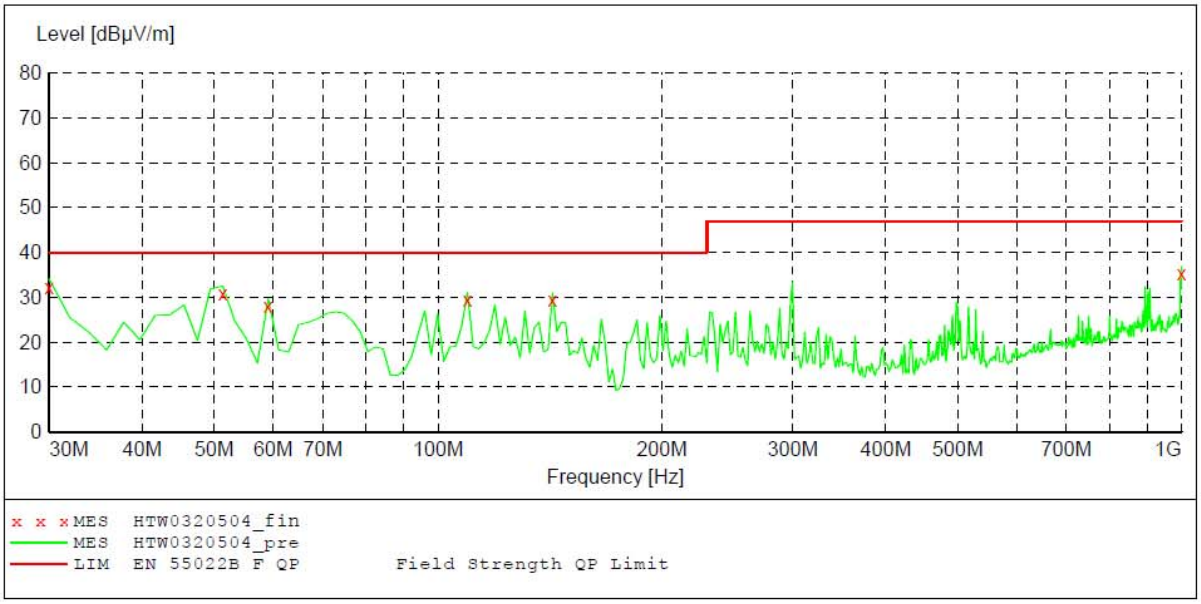
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST EN 55022 CLASS B

EUT: ActivBoard Touch M/N:PRM-AB678-01
Manufacturer: PROMETHEAN LIMITED
Operating Condition: ON
Test Site: 3M CHAMBER
Operator: Chang Xu
Test Specification: DC 5V
Comment:
Start of Test: 3/21/2013 / 8:08:35AM

SCAN TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562



MEASUREMENT RESULT: "HTW0320504_fin"

3/21/2013 8:30AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	32.00	-7.8	40.0	8.0	QP	100.0	241.00	VERTICAL
51.340000	30.50	-19.7	40.0	9.5	QP	100.0	110.00	VERTICAL
59.100000	27.70	-22.0	40.0	10.3	QP	100.0	326.00	VERTICAL
109.540000	29.10	-16.5	40.0	10.9	QP	100.0	333.00	VERTICAL
142.520000	29.00	-18.9	40.0	11.0	QP	100.0	247.00	VERTICAL
1000.000000	34.90	-2.3	47.0	12.1	QP	100.0	355.00	VERTICAL

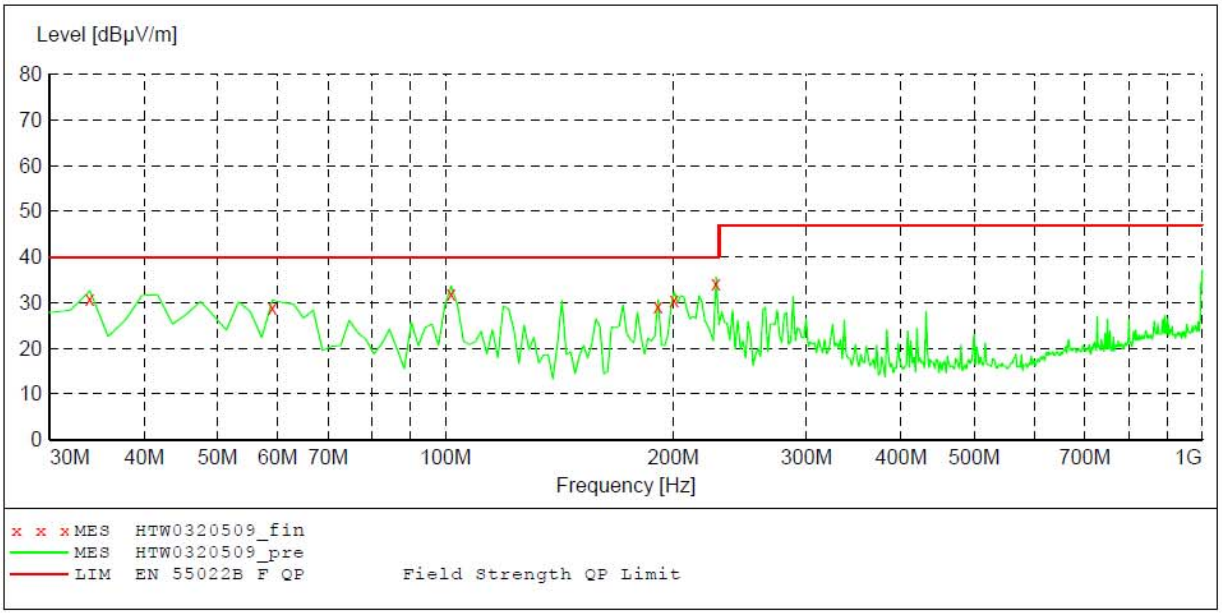
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST EN 55022 CLASS B

EUT: ActivBoard Touch M/N:PRM-AB688-01
Manufacturer: PROMETHEAN LIMITED
Operating Condition: ON
Test Site: 3M CHAMBER
Operator: Chang Xu
Test Specification: DC 5V
Comment:
Start of Test: 3/21/2013 / 9:35:33AM

SCAN TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562



MEASUREMENT RESULT: "HTW0320509_fin"

3/21/2013 9:57AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.880000	30.60	-9.9	40.0	9.4	QP	300.0	185.00	HORIZONTAL
59.100000	28.60	-22.0	40.0	11.4	QP	300.0	360.00	HORIZONTAL
101.780000	31.70	-16.7	40.0	8.3	QP	300.0	253.00	HORIZONTAL
191.020000	28.70	-19.2	40.0	11.3	QP	100.0	42.00	HORIZONTAL
200.720000	30.30	-18.2	40.0	9.7	QP	100.0	143.00	HORIZONTAL
227.880000	33.70	-16.8	40.0	6.3	QP	100.0	42.00	HORIZONTAL

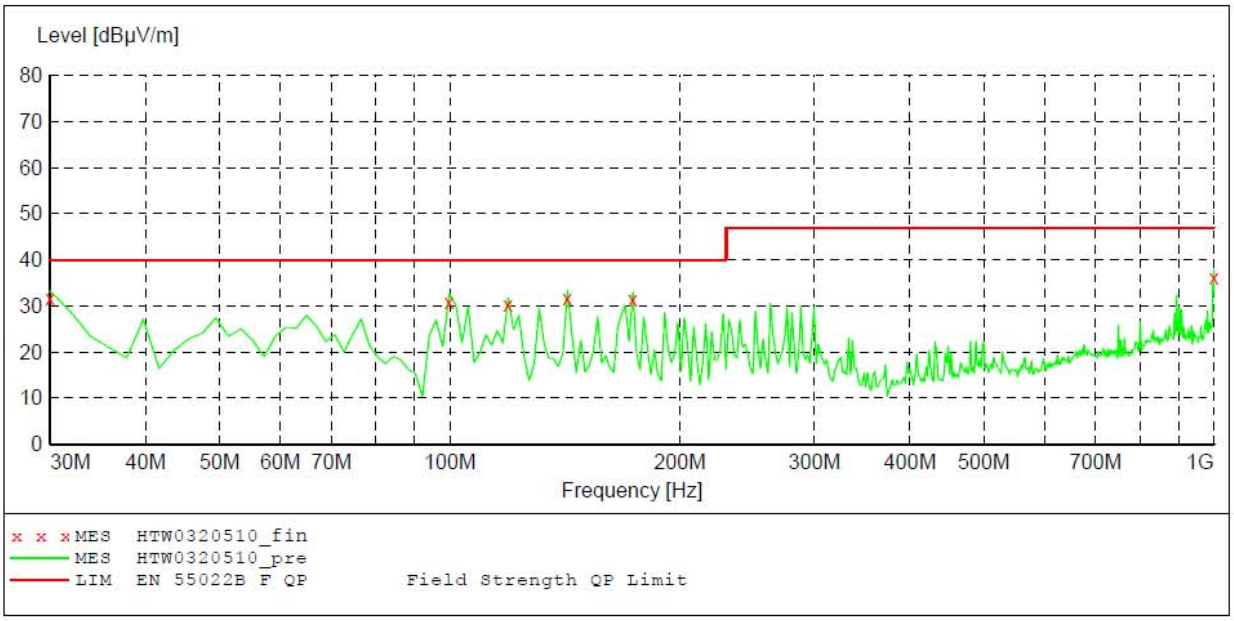
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST EN 55022 CLASS B

```
EUT:                 ActivBoard Touch M/N:PRM-AB688-01
Manufacturer:        PROMETHEAN LIMITED
Operating Condition: ON
Test Site:           3M CHAMBER
Operator:            Chang Xu
Test Specification:  DC 5V
Comment:
Start of Test:       3/21/2013 /  9:57:42AM
```

SCAN TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562



MEASUREMENT RESULT: "HTW0320510_fin"

3/21/2013 10:24AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	31.20	-7.8	40.0	8.8	QP	100.0	119.00	VERTICAL
99.840000	30.60	-16.8	40.0	9.4	QP	100.0	68.00	VERTICAL
119.240000	29.80	-16.3	40.0	10.2	QP	100.0	119.00	VERTICAL
142.520000	31.40	-18.9	40.0	8.6	QP	100.0	358.00	VERTICAL
173.560000	31.00	-19.9	40.0	9.0	QP	100.0	274.00	VERTICAL
1000.000000	35.90	-2.3	47.0	11.1	QP	100.0	360.00	VERTICAL

4.2. Conducted disturbance

For test instruments and accessories used see section 3.6.

4.2.1. Description of the test location

Test location: Shielded room No.2

4.2.2. Limits of disturbance(Class B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66~56	56~46
0.5000~5.000	56	46
5.000~30.000	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.2.3. Description of the test set-up

4.2.3.1. Operating Condition

The EUT is turned on during the test, and the results of the maximum emanation are recorded.

4.2.3.2. Test Configuration and Procedure

EUT is placed on a nonmetal table above the grounded reference plane. Connect the power line of the EUT to the LISN which is connected to receiver by coaxial line, then disturbance signals can be detected by the receiver.

4.2.3.3. Photos of the test set-up

4.2.4. Test result

The requirements are **Fulfilled**

Band Width: 9kHz

Frequency Range: 150kHz to 30MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).

Margin=limit-level

Level=read values+transducer

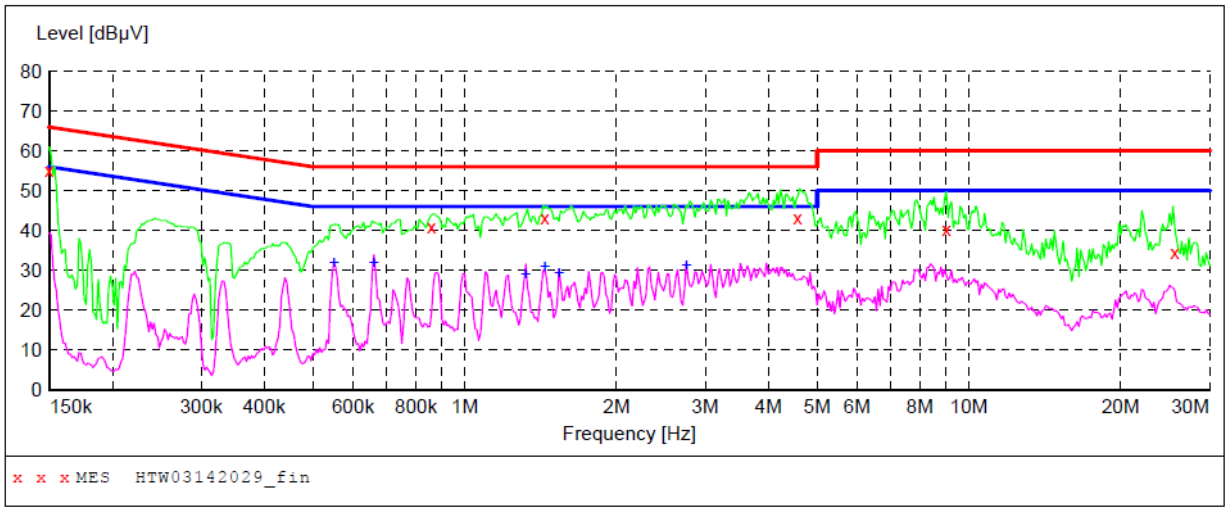
Transducer=insertion loss of LISN+cable loss+insertion loss of pulse limiter

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test EN 55022 CLASS B

EUT: ActivBoard Touch M/N:PRM-AB688-01
Manufacturer: PROMETHEAN LIMITED
Operating Condition: ON
Test Site: 2# SHIELDED ROOM
Operator: Zhou
Test Specification: DC 5V
Comment:
Start of Test: 3/18/2013 / 9:42:13AM

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW03142029_fin"

3/18/2013 9:48AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	55.20	9.9	66	10.8	QP	N	GND
0.858910	40.90	9.9	56	15.1	QP	N	GND
1.441720	43.30	10.0	56	12.7	QP	N	GND
4.577820	43.30	10.1	56	12.7	QP	N	GND
9.011651	40.30	10.4	60	19.7	QP	N	GND
25.593778	34.50	10.9	60	25.5	QP	N	GND

MEASUREMENT RESULT: "HTW03142029_fin2"

3/18/2013 9:48AM

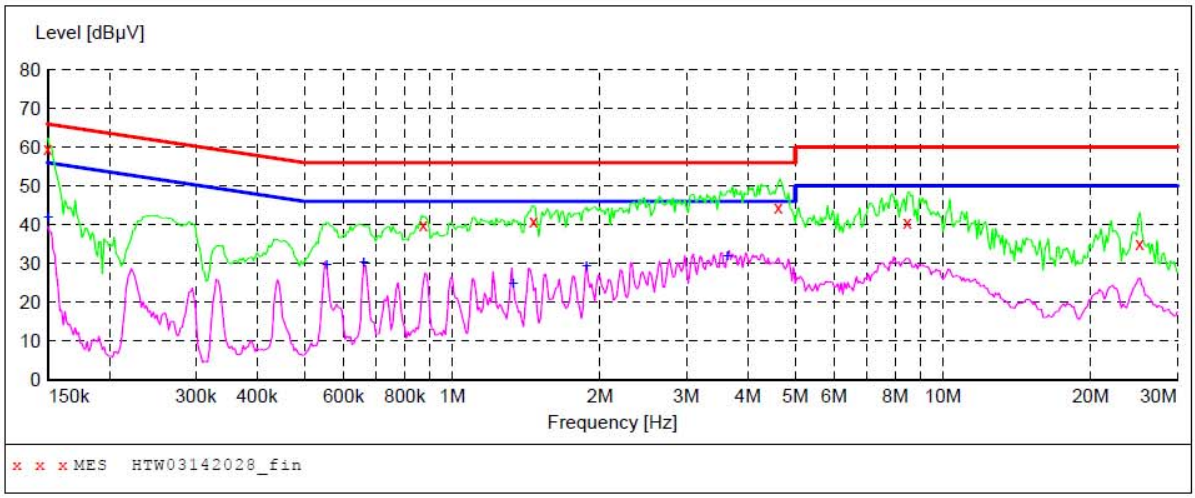
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.549733	32.10	9.9	46	13.9	AV	N	GND
0.660311	32.00	9.9	46	14.0	AV	N	GND
1.320732	29.10	10.0	46	16.9	AV	N	GND
1.441722	31.10	10.0	46	14.9	AV	N	GND
1.536615	29.30	10.0	46	16.7	AV	N	GND
2.749058	31.30	10.1	46	14.7	AV	N	GND

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test EN 55022 CLASS B

EUT: ActivBoard Touch M/N:PRM-AB688-01
Manufacturer: PROMETHEAN LIMITED
Operating Condition: ON
Test Site: 2# SHIELDED ROOM
Operator: Zhou
Test Specification: DC 5V
Comment:
Start of Test: 3/18/2013 / 9:35:46AM

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW03142028_fin"

3/18/2013 9:41AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	59.80	9.9	66	6.2	QP	L1	GND
0.872700	40.00	9.9	56	16.0	QP	L1	GND
1.464880	41.00	10.0	56	15.0	QP	L1	GND
4.614450	44.40	10.1	56	11.6	QP	L1	GND
8.455130	40.70	10.4	60	19.3	QP	L1	GND
25.189134	35.10	10.9	60	24.9	QP	L1	GND

MEASUREMENT RESULT: "HTW03142028_fin2"

3/18/2013 9:41AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	41.90	9.9	56	14.1	AV	L1	GND
0.554130	29.70	9.9	46	16.3	AV	L1	GND
0.660310	30.30	9.9	46	15.7	AV	L1	GND
1.331298	24.80	10.0	46	21.2	AV	L1	GND
1.875334	29.40	10.1	46	16.6	AV	L1	GND
3.633320	31.80	10.1	46	14.2	AV	L1	GND

4.3. Harmonic current

The test is not applicable to the EUT.

4.4. Voltage Fluctuation and Flicker

The test is not applicable to the EUT.

4.5. Electrostatic discharge

For test instruments and accessories used see section 3.6.

4.5.1. Description of the test location and date

Test location: Shielded room No.1

Date of test: Mar 20,2013

Operator: Chang Xu

4.5.2. Severity levels of electrostatic discharge

4.5.2.1. Severity level: Contact Discharge at ±4KV Air Discharge at±8KV

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	2	2
2	4	4
3	6	8
4	8	15
X	Special	Special

4.5.2.2. Performance criterion: **B**

4.5.3. Description of the test set-up

4.5.3.1. Operating Condition

The EUT is turned on during the test, and the results of the maximum susceptivity are recorded.

4.5.3.2. Test Configuration and Procedure:

Direct Discharge:

Air Discharge:

－This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

Contact Discharge:

－All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

Indirect Discharge:

－The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 10 times discharge.

－The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 10 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to nce criterion.

4.5.3.3. Photo of the test set-up

4.5.4. Test specification:

Contact discharge voltage:	■ 2 kV	■ 4 kV	
Number of discharges:	■ 10	□ 25	
Air discharge voltage:	■ 2 kV	■ 4 kV	■ 8 kV
Number of discharges:	□ 10	■ 25	
Type of discharge:	Direct discharge	■ Air discharge ■ Contact discharge	
	Indirect discharge	■ Contact discharge	
Polarity:	■ Positive	■ Negative	
Discharge location:	■ see photo documentation of the test set-up		
	■ all external locations accessible by hand		
	■ Horizontal coupling plane (HCP)		
	■ vertical coupling plane (VCP)		

4.5.5. Test result

The requirements are **Fulfilled** Performance Criterion: **B**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.6. Radiated, radio-frequency, electromagnetic field

For test instruments and accessories used see section 3.6.

4.6.1. Description of the test location and date

Test location: Shielded room No.4

Date of test: Mar 20, 2013

Operator: Chang Xu

4.6.2. Severity levels of radiated, radio-frequency, electromagnetic field

4.6.2.1. Severity level: 3 V/m

Level	Field Strength (V/m)
1.	1
2.	3
3.	10
X	Special

4.6.2.2. Performance criterion**: A**

4.6.3. Description of the test set-up

4.6.3.1. Operating Condition

The EUT is turned on during the test, and the results of the maximum susceptivity are recorded.

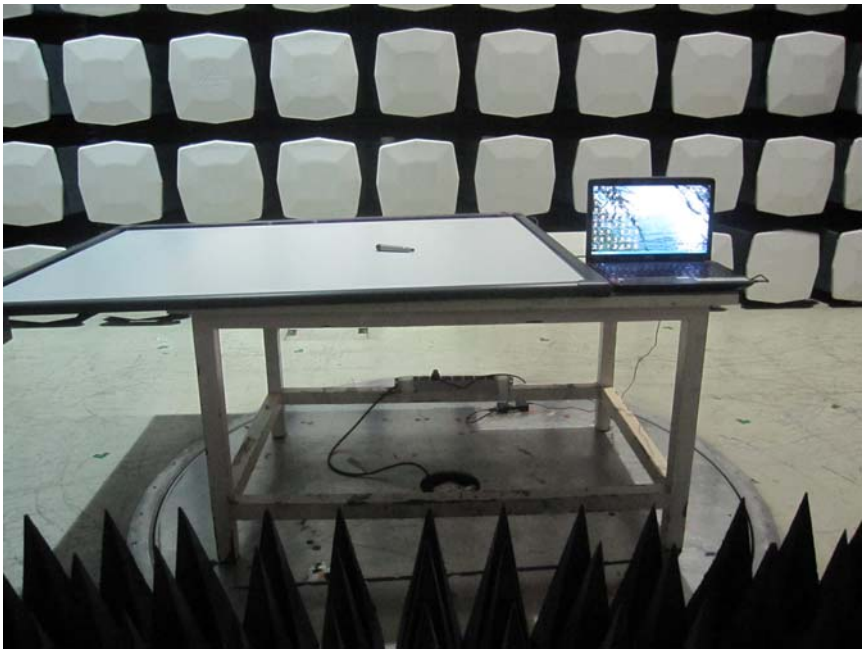
4.6.3.2. Test Configuration and Procedure

EUT is placed on a table which is 0.8 meter above ground. The center of the transmitting antenna mounted on an antenna mast is set 3 meter away from the EUT. During the test, each of four sides of EUT will face the transmitting antenna with the turntable cycled. Both horizontal and vertical polarization of the antenna are set on test and measured individually.

In order to judge the performance of the EUT, a set of monitor system is used.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.6.3.3. Photo of the test set-up



4.6.4. Test specification:

Frequency range:	■ 80 MHz to 1000 MHz
Field strength:	■ 3 V/m
EUT - antenna separation:	■ 3 m
Modulation:	■ AM: 80 % ■ sinusoidal 1000Hz

Frequency step: ■ 1 % with 1 s dwell time

Antenna polarisation: ■ horizontal ■ vertical

4.6.5. Test result

The requirements are **Fulfilled** Performance Criterion: **A**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.7. Electrical Fast Transients / Burst

For test instruments and accessories used see section 3.6.

4.7.1. Description of the test location and date

Test location: Shielded room No.1

Date of test: Mar 26, 2013

Operator: Chang Xu

4.7.2. Severity levels of electrical fast transients / Burst

4.7.2.1. Severity level: ±500V for signal lines

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O signal, data and control ports	
	V peak(kV)	Repetition rate (kHz)	Voltage peak	Repetition rate (kHz)
1	0.5	5 or 100	0.25	5 or 100
2	1	5 or 100	0.5	5 or 100
3	2	5 or 100	1	5 or 100
4	4	5 or 100	2	5 or 100
X	Special	Special	Special	Special

4.7.2.2. Performance criterion: **B**

4.7.3. Description of the test set-up

4.7.3.1. Operating Condition

The EUT is turned on during the test, the results of the maximum emanation are recorded.

4.7.3.2. Test Requirements

EUT and its simulators shall be placed 0.1m high above the ground reference plane which is a minimum 1m×1m with minimum 0.65mm thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

4.7.3.3. Test Configuration and Procedure

For Signal Line:

Coupling clamp is directly placed on the ground reference plane with its metallic bottom contacting the plane. The signal lines and control lines of EUT are put through the coupling clamp which couples the EFT signal to these lines. During the test, both polarities of the test voltage should be applied and the duration of the test can't be less than 1 minute.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.7.3.4. Photos of the test set-up

4.7.4. Test specification:

Coupling network:	☐ 0.5 kV ☐ 1 kV ☐ 2 kV ☐ 4 kV
Coupling clamp:	■ 0.5 kV ☐ 1 kV ☐ 2 kV ☐ 4 kV
Burst frequency:	■ 5.0 kHz
Coupling duration:	■ 60 s
Polarity:	■ positive ■ negative

4.7.5. Coupling points

Cable description:	Signal line	
Screening:	■ screened	o unscreened
Status:	o passive	■ active
Signal transmission:	■ analogue	o digital
Length:	o 5.0 m	

4.7.6. Test result

The requirements are **Fulfilled** Performance Criterion: **B**

Remarks: During the test no deviation was detected for the selected operation mode(s).

4.8. Surge

The test is not applicable to the EUT.

4.9. Conducted Disturbances Induced by Radio-frequency Fields

For test instruments and accessories used see section 3.6.

4.9.1. Description of the test location and date

Test location: Shielded room No.2

Date of test: Mar 26, 2013

Operator: Chang Xu

4.9.2. Severity levels of conducted disturbances induced by radio-frequency fields discharge

4.9.2.1. Severity Level: 3V

Level	Field Strength （V）
1	1
2	3
3	10
X	Special

4.9.2.2. Performance Criterion: **A**

4.9.3. Description of the test set-up

4.9.3.1. Operating Condition

The EUT is turned on during the test, the results of the maximum emanation are recorded.

4.9.3.2. Test Configuration and Procedure

For Signal Line :

EUT is placed on an insulated support of 0.1m high above a ground reference plane. The EM clamp is directly placed on the ground reference plane with its metallic bottom contacting the plane. Cables between EUT and auxiliary equipment are put through the EM clamp. The disturbance signal amplified by amplifier is injected into EUT through EM clamp.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.9.3.3. Photos of the test set-up

4.9.4. Test specification:

Frequency range: ■ 0.15 MHz to 80 MHz

Test voltage: ■ 3 V

Modulation: ■ AM: 80 %
■ sinusoidal 1000Hz

Frequency step: ■ 1 % with 1 s dwell time

4.9.5. Coupling points

Cable description : Signal line

Screening:	■ screened	o unscreened
Status:	o passive	■ active
Signal transmission:	■ analogue	o digital
Length:	o 1.0 m	

4.9.6. Test result

The requirements are **Fulfilled** Performance Criterion: **A**

Remarks: During the test no deviation was detected for the selected operation mode(s).

4.10. Magnetic Field Immunity

It is deemed that according to the standard of EN 61000-4-8: 2010, this test is not applicable to the EUT which dose not contain devices susceptible to magnetic fields, such as CRT monitors, Hall elements, electro-dynamic microphone, magnetic field sensor, etc

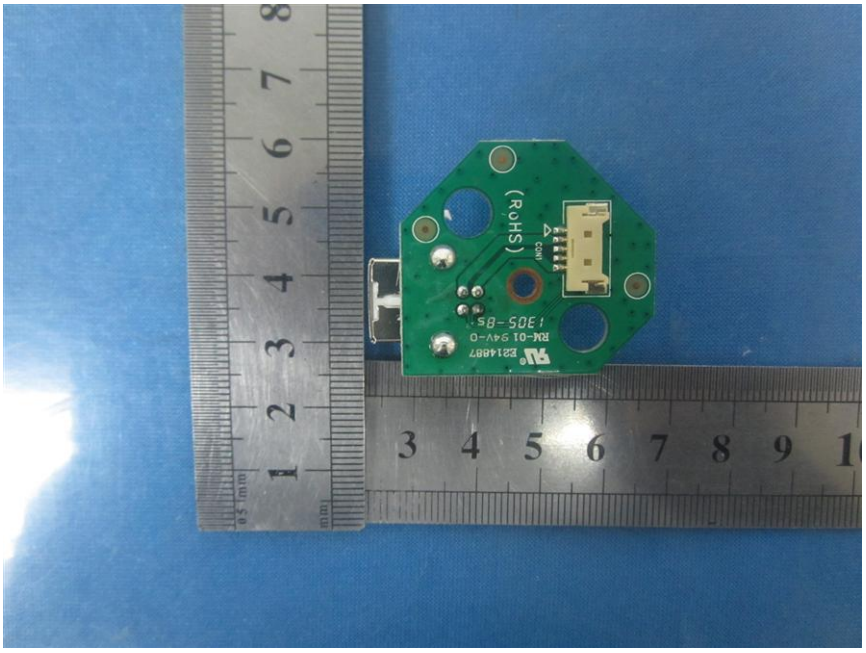
4.11. Voltage Dips and Interruptions

The test is not applicable to the EUT.

5. External and Internal Photos of the EUT

5.1. External and Internal photos of the EUT

5.2. Internal photos of the EUT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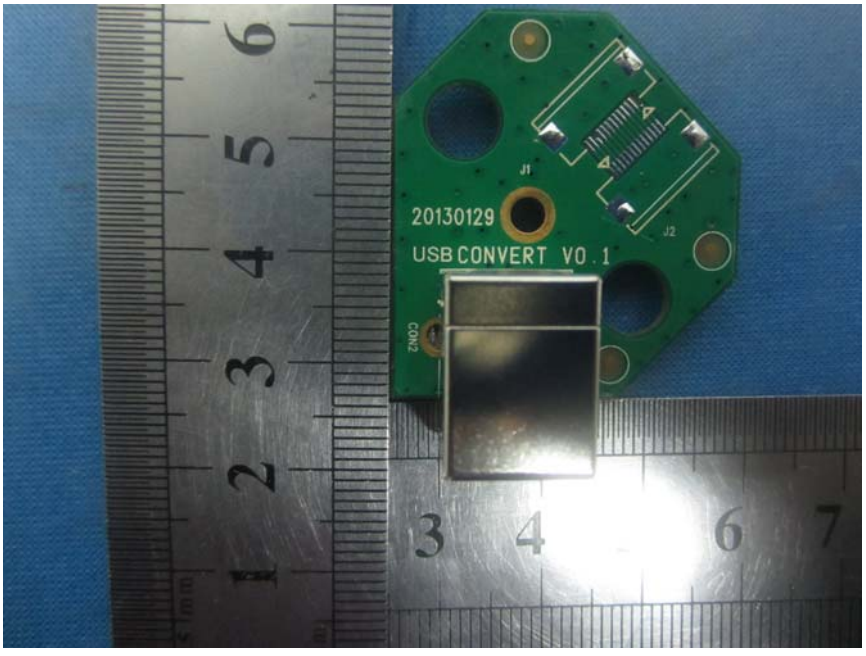
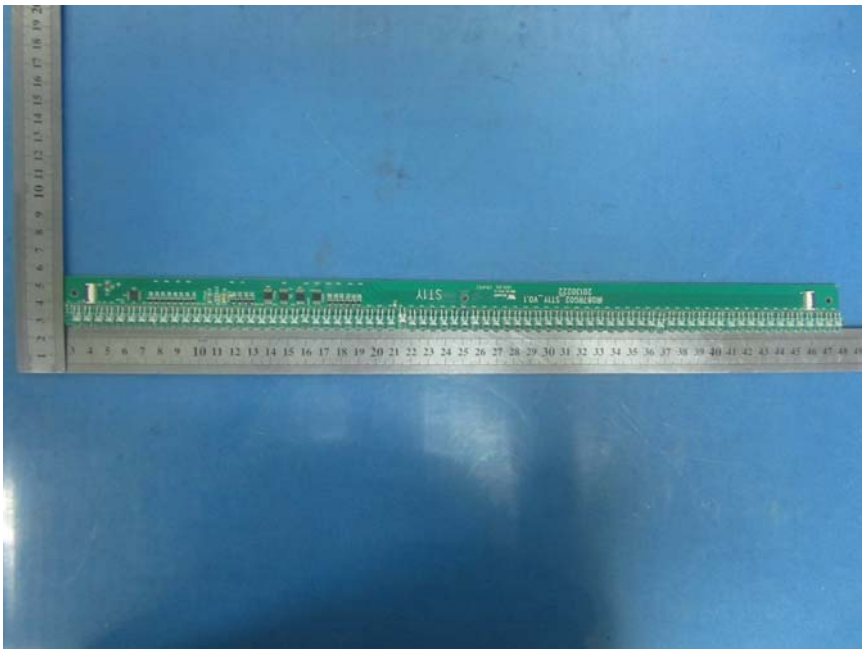
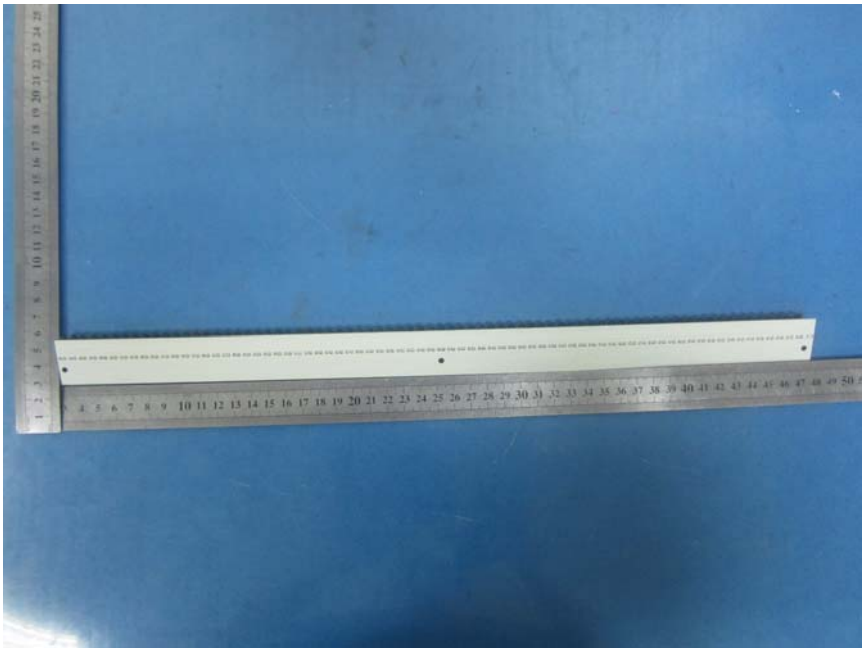

20130129
USB CONVERT V0.1
J1
J2
CON2



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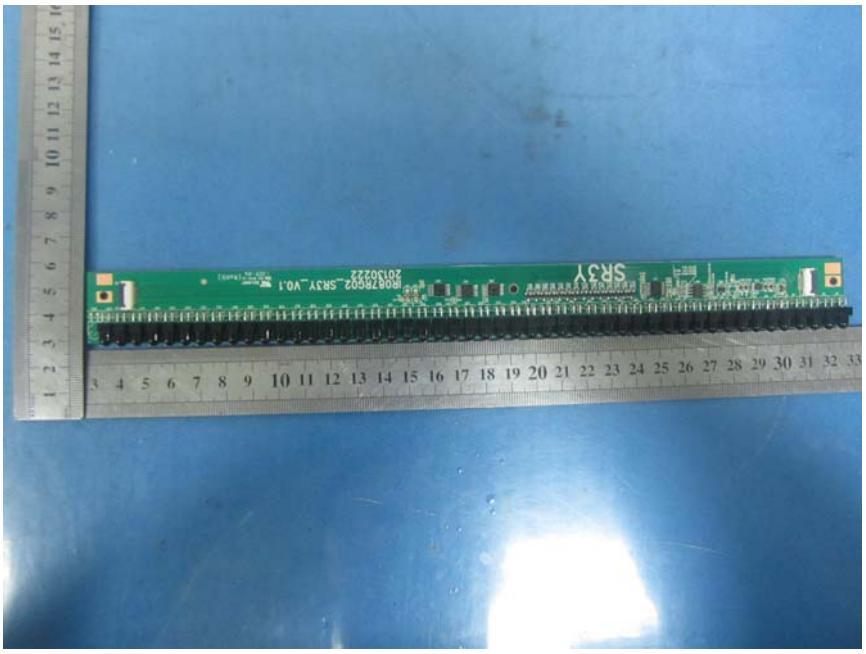
ST2X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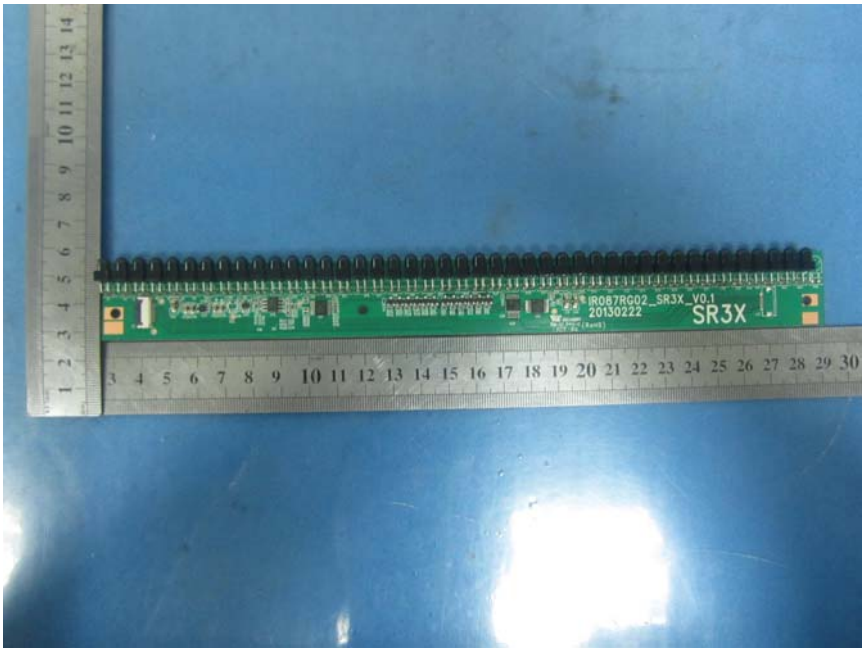
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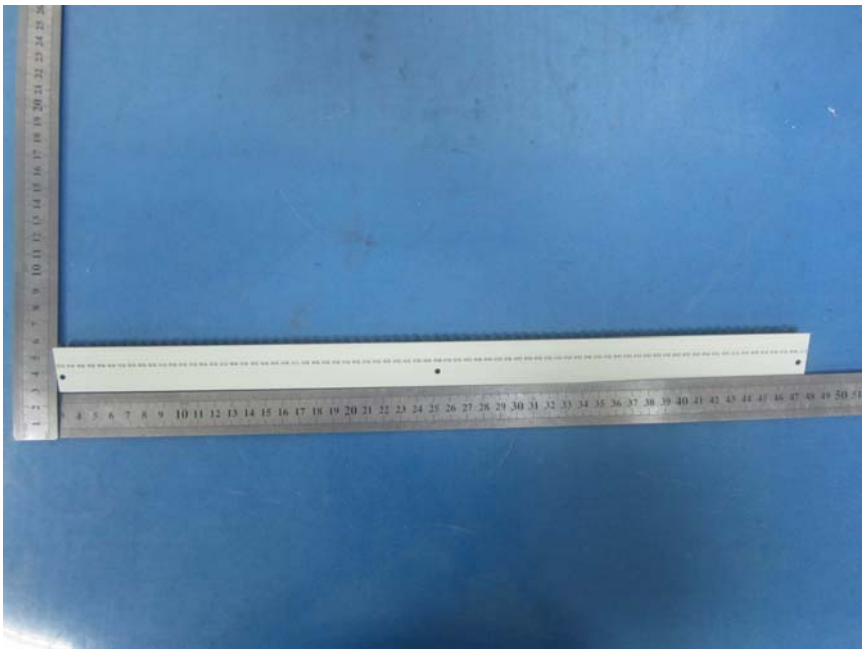

.....End of Report.....